RAINBOW BROADCASTING COMPANY EXHIBIT 1

Rainbow Broadcasting Company's application for construction permit for Channel 65, Orlando, Florida was granted by Commission Order, FCC 85-558, released October 18, 1985. By that Order the F.C.C. denied applications for review of a Review Board decision (FCC 84R-85, released December 3, 1984) granting Rainbow's application. The Commission's decision was appealed to the United States Court of Appeals for the District of Columbia Circuit (Case No. 85-1755). After submission of the written briefs but before oral argument, the Commission requested that the Court return the proceeding to the F.C.C. Upon remand (by order of November 5, 1986), the Commission determined that "this licensing proceeding would be held in abeyance pending the outcome of the FCC's proceeding in MM Docket No. 86-484" (Commission Report to the Court, dated February 29, 1988).

It was not until June 9, 1988 that the proceeding was ordered returned by the Court of Appeals. The case was decided by the United States Court of Appeals for the District of Columbia Circuit on April 21, 1989. The mandate of the Court has not yet issued and the time for reconsideration or appeal has not yet run.

In view of the foregoing chronology, Rainbow has not yet been in a position to undertake construction on Channel 65, Orlando absent the threat of judicial reversal of the license award. Moreover, from November 5, 1986 through June 9, 1988, the period during which the proceeding was returned to the F.C.C. and placed in abeyance by the Commission, Rainbow's construction permit could not be considered to have been "final", i.e., a construction permit upon which Rainbow would have been permitted to construct and operate on Channel 65, Orlando.

In view of the fact that Rainbow's construction permit was never "final" in any practical sense and from November 1986 to June 1988 was also not final in a legal sense, Rainbow does not believe a request for extension was necessary. This Form 307 request is being filed only to comply with the letter from Clay C. Pendarvis, Chief, Television Branch, dated April 10, 1989 and to preserve Rainbow's call letters and frequency.

FCC Form 392
August 1977

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D. C. 20554

Call Sign WRBW(TV)

Station Location: Orlando,FL

EMERGENCY BROADCAST SYSTEM AUTHORIZATION

Under Section 2.407 of the Commission's Rules, the Broadcast Station described below may be used and operated for the purpose of participating in the Emergency Broadcast System during an Emergency Action Condition, in accordance with the requirements hereinafter set forth, and Subpart G of Part 73 of the Commission's Rules.

Conditions of operation: All operation under this authority shall be in accordance with the terms and conditions of the current normal license of the station, or as specifically provided in the Detailed State Emergency Broadcast System (EBS) Operational Plan.

Licensed operator requirements: The licensed operator requirements applicable to operation of the station under its regular station license shall apply to operation under this authorization.

Term of authorization: This authorization may be changed or cancelled by the Commission at any time without the necessity of a hearing if in the judgment of the Commission such change or cancellation is necessary.

Expiration date: The authority herein granted shall expire with the expiration of the current normal license of the station. Unless surrendered by the holder or suspended, modified, or withdrawn by the Commission, this authorization shall have continuing and renewed effect under succeeding license renewals.

Effective date: April 24, 1986

FEDERAL COMMUNICATIONS COMMISSION

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

File No. BPCT-820909KF

Call Sign WRBW

Modification No.

MODIFICATION OF CONSTRUCTION PERMIT

COMMERCIAL TELEVISION

(Class of station)

Rainbow Broadcasting Company
Station WRBW(TV)
831 Murdock Boulevard
Orlando, FL 32817

Permittee Rainbow Broadcasting Company

Station location: Orlando, Florida

Associated Broadcast station:

The Authority Contained in Authorization File No. BPCT-820909KF **dated** October 11, 1985 **granted to the Permittee listed above is hereby modified in part as follows:**

CALL LETTERS ASSIGNED: WRBW

This modification of construction permit shall be attached to and be made a part of the construction permit of this station.

Except as herein expressly modified, the above-mentioned construction permit, subject to all modifications heretofore granted by the Commission, is to continue in full force and effect in accordance with the terms and conditions thereof and for the period therein specified.

Dated: April 24, 1986

yah

FEDERAL COMMUNICATIONS COMMISSION

F. C. C. - WASHINGTON, D. C.

FCC Form 361
October 1978

83-142 83-142

RECEIVED

FEB 24 1986

FCC
Office of the Secretary

WILEY & REIN

1776 K STREET, N. W.
WASHINGTON, D. C. 20006
(202) 429-7000

301

WRITER'S DIRECT DIAL NUMBER
(202) 429-7025

February 19, 1986

Mr. William J. Tricarico
Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: Rainbow Broadcasting Company
Channel 65, Orlando, Florida
CP Modification Application

Dear Mr. Tricarico:

On behalf of our client, Rainbow Broadcasting Company, there is transmitted herewith on FCC Form 301 an application for a minor modification in its outstanding construction permit (File No. BPCT-820909KF) for construction of a new television broadcast station on Channel 65 in Orlando, Florida. (Call letters WRBW have been requested for this station.) The application proposes use of an existing tower very near the antenna site specified in the outstanding construction permit, and minor changes in other parameters such as antenna height above average terrain.

Also attached is the certification of site availability for the new site, per the Commission's Public Notice of June 26, 1985. If there are any questions concerning this application, please communicate with the undersigned.

Yours truly,

Barry D. Wood

Barry D. Wood
Attorney for Rainbow
Broadcasting Company

Enclosure

cc w/enc: Robert J. Buenzle, Esquire
John H. Midlen, Jr., Esquire

MAR 1986

For Commission Use Only

File No.

United States of America
Federal Communications Commission
Washington, D.C. 20554

Approved by OMB
: 3060-0027
Expires 12/31/87

APPLICATION FOR CONSTRUCTION PERMIT FOR COMMERCIAL BROADCAST STATION

(Carefully read instructions before filling out Form– **RETURN ONLY FORM TO FCC)**

RECEIVED
FEB 24 1986
FCC
Office of the Secretary

Section I **General Information**

1. Name of Applicant

Rainbow Broadcasting Company

Street Address

1525 S. Ocean Drive

City: Ft. Lauderdale | State: FL | ZIP Code: 33316 | Telephone No. *(Include Area Code)*: (305) 525-9930

Send notices and communications to the following named person at the address below:

Name

Joseph Rey at above address with
cc to: Barry D. Wood, Esq.
Wiley & Rein
1776 K Street, N.W.
Washington, D.C. 20006
(202) 429-7025

Street Address

City | State | ZIP Code | Telephone No. *(Include Area Code)*

2. This application is for: ☐ AM ☐ FM ☒ TV

(a) Channel No. or Frequency: Channel 65

(b) Community of license:

City: Orlando | State: FL

(c) Check one of the following boxes:

New Station	Change in existing station: Major	Change in existing station: Minor	Amendment to pending Application
☐	☐	☒	☐

☐ Modification of Construction Permit

Call Letters: WRBW* (*requested 10/24/85)

Give reference No.

NOTE: It is not necessary to use this form to amend a previously filed application. Should you do so, however, please submit only Section I and those other portions of the form that contain the amended information.

3. Is this application mutually exclusive with a renewal application?

☐ YES ☒ NO

If Yes, state: Call letters: Community of license:

MAR 1986

City | State

Section VI — Equal Employment Opportunity Program

1. Does the applicant propose to employ five or more fulltime employees? ☐ YES ☐ NO
N/A

If the answer is Yes, the applicant must include an EEO program called for in the separate 5 Point Model EEO Program (FCC 396A).

Section VII — Certification

1. Has or will the applicant comply with the public notice requirement of Section 73.3580 of the Commission's Rules? ☐ YES ☐ NO
N/A

The APPLICANT hereby waives any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. *(See Section 304 of the Communications Act of 1934, as amended.)*

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations, and that all exhibits are a material part hereof and incorporated herein.

The APPLICANT represents that this application is not filed for the purpose of impeding, obstructing, or delaying determination on any other application with which it may be in conflict.

In accordance with Section 1.65 of the Commission's Rules, the APPLICANT has a continuing obligation to advise the Commission, through amendments, of any substantial and significant changes in information furnished.

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT.
U.S. CODE, TITLE 18, Section 1001.

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Signed and dated this 11th day of February, 1986.

Rainbow Broadcasting Company
Name of Applicant

Signature

Partner
Title

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The principal purpose for which the information will be used is to determine if the benefit requested is consistent with the public interest. The staff, consisting variously of attorneys, accountants, engineers, and application examiners, will use the information to determine whether the application should be granted, denied, dismissed, or designated for hearing. If all the information requested is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Accordingly, every effort should be made to provide all necessary information. Your response is required to obtain the requested Authority.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3) AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

105776

Approved by OMB
OMB No. 3060-0027
Expires 5-31-88

CERTIFICATION OF SITE AVAILABILITY

1. The applicant certifies that it has reasonable assurance in good faith that the site or structure proposed in Items 1 and/or 2, Section V-G, FCC Form 301, as the location of its transmitting antenna, will be available to the applicant for applicant's intended purpose.

YES _____ NO _____

If no, explain fully:

2. If reasonable assurance is not based on applicant's ownership of the proposed site or structure, applicant certifies that it has obtained such reasonable assurance by contacting the owner or person possessing control of the site or structure.

CHARLES SANFORD
Name of Person Contacted

(207) 797-9330
Telephone Number

Person contacted (check one):

Owner _____ Owner's Agent ✓ Other (specify) _____

Joseph Levy
Applicant's Signature

FEB 17, 1986
Date

Section V-C **Television Broadcast Engineering Data**

Name of Applicant: Rainbow Broadcasting Company

1. Purpose of authorization applied for:

- ☐ Construct a new station
- ☐ Install Auxiliary System

Change:

- ☐ Effective radiated power
- ☐ Frequency
- ☒ Antenna Height above average terrain
- ☒ Transmitter location
- ☐ Studio location outside community of license
- ☒ Other *(summarize briefly the nature of the changes proposed)* Change antenna and use elliptical polarization

2. Station location: State: Florida; City or Town: Orlando

3. Facilities requested: Channel No. 65; Zone III; Maximum effective radiated power: Visual 5000 kW.; Aural 473 kW.

4. Geographical Coordinates of antenna (to nearest second)

North Latitude 28° 34' 51" West Longitude 81° 04' 32"

5. Height of antenna radiation center:

above average terrain (HAAT)	above mean sea level	above ground
1527 ft. (465 m)*	1558 ft. (474.9 m)	1493 ft. (455.1 m)

6. Overall height of complete antenna structure above ground (with obstruction lighting) 1609 ft.

7. Antenna:

	Manufacturer	Model No.	Electrical beam tilt
☒ DA ☐ Non-DA	Andrew	ATW31H3.15-DSC-65	0.9 degrees

Azimuth of major lobe(s) (Horizontal polarization): 215 degrees true

Mechanical beam tilt: N/A degrees

8. Transmitter location: State: Florida; County: Orange; City or Town: Bithlo; Street Address or Other Identification: Near intersection of State Routes 420 and 419.

*Rounded value.

9. (a) If directional antenna is proposed, give full details including horizontal and vertical plane radiation patterns as Exhibit No. Eng. pursuant to Section 73.685 of the Commission's Rules.

   (b) If electrical or mechanical beam tilting is proposed, describe fully in Exhibit No. Eng. pertinent vertical and horizontal radiation patterns.

10. Attach as Exhibit No. Eng. map(s) (Sectional Aeronautical charts or equivalent) of the area proposed to be served and show thereon:

   (a) Proposed transmitter location and the radials along which the profile graphs have been prepared;

   (b) The City Grade, Grade A and Grade B contours predicted;

   (c) On the map(s) showing the City Grade contour, clearly indicate the legal boundaries of the principal community proposed to be served;

   (d) Scale of miles;

   (e) Area (sq. mi.) and population (latest census) within Grade B contour.

11. Will the proposed City Grade contour completely encompass the principal community, without major terrain obstruction? ☒ YES ☐ NO

   If no, attach as Exhibit No._____ justifications.

12. If the main studio will not be within the boundaries of the principal community to be served, attach as Exhibit No. N/A a justification pursuant to Section 73.1125 of the Commission's Rules.

13. Attach as Exhibit No. Eng. map(s) (7.5 minute U.S. Geographic Survey topographic quadrangles (if available)) of the proposed antenna location showing the following information:

   (a) Proposed transmitter location accurately plotted with the latitude and longitude lines clearly marked and showing a scale of statute miles.

   (b) Transmitter location and call letters of all AM broadcast stations within 2 miles of the proposed antenna location.

14. If there are any FM or TV stations within 200 feet of the proposed antenna or non-broadcast radio stations (except amateur and citizens band), established commercial and government receiving stations in the general vicinity which may be adversely affected by the proposed operation, attach as Exhibit No. Eng. the expected effect, a description of remedial steps that may be pursued if necessary, and a statement from the applicant accepting full responsibility for the elimination of any objectionable effect on existing stations.

15. Tabulation of Terrain Data (Calculated in accordance with the procedure prescribed in Section 73.684 of the Commission's Rules, utilizing 7-1/2 minute topographic maps if available.)

Radial bearing (degrees True)	Height of antenna radiation center above average elevation of radial (2-10 mi) Feet	Predicted Distance To the City Grade Contour Miles	To the Grade A Contour Miles	To the Grade B Contour Miles
0°				
45°				
90°				
135°				
180°	See Engineering Exhibit - Figure 8			
225°				
270°				
315°				
(*)				

*Radial over principal community, if not included above. DO NOT include in average.

16. Environmental Statement, See Part 1, Subpart 1 of the Commission's Rules.

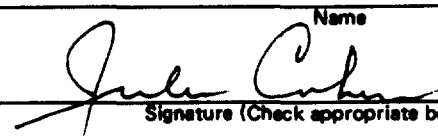
Would a Commission grant of this application be a major action as defined by Section 1.1305 of the Commission's Rules? ☐ YES ☒ NO

If Yes, attach as Exhibit No._____ a narrative statement in accordance with Section 1.1311 of the Commission's Rules.

If No, explain briefly. Antenna structure in existence and colocated with three FM broadcast stations.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Jules Cohen
Name


Signature (Check appropriate box below)

February 3, 1986

1730 M Street, N.W., Suite 400
Address (include ZIP Code)

Washington, D. C. 20036

(202) 659-3707
Telephone No. (include Area Code)

☐ Technical Director ☒ Registered Professional Engineer ☐ Chief Operator

☐ Technical Consultant ☐ Other (specify)

ANTENNA AND SITE INFORMATION

Name of Applicant	Call Sign	Station Location
Rainbow Broadcasting Company		Orlando, Florida

Purpose of Application (Put "X" in appropriate box) N/A

- ☐ New antenna construction
- ☐ Alteration of existing antenna structure
- ☐ Change in location Antenna to be side mounted on existing structure

Facilities Requested

CH 65, 5000 KW(MAX-DA), 465 METERS

1. Location of Antenna:

State	County	City or Town
Florida	Orange	Bithlo

Exact antenna location (street address). If outside city limits, give name of nearest town and distance and direction of antenna from town.

3.4 miles north-northeast of Bithlo, Florida

Geographical coordinates (to nearest second). For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude 28° 34' 51" West Longitude 81° 04' 32"

2. Is the proposed site the same transmitter-antenna site of other stations authorized by the Commission or specified in another application pending before the Commission? ☒ YES ☐ NO

If Yes, give call sign: WHOO-FM, WSTF(FM),WSSP(FM)

3. Has the FAA been notified of proposed construction? Not required. No increase in height of existing tower. ☐ YES ☒ NO

If Yes, give date and office where notice was filed.

4. List all landing areas within 5 miles of antenna site. Give distance and direction to the nearest boundary of each landing area from the antenna site.

	Landing Area	Distance	Direction
(a)	None within five miles		
(b)			
(c)			

5. Attach as Exhibit No. Eng-8 description of the antenna system, including whether tower(s) are self-supporting or guyed. If a directional antenna, give spacing and orientation of towers.

Tower	#1	#2	#3	#4	#5	#6
Overall height above ground (include obstruction lighting) Existing	1609' (490.4 m)					
Overall height above mean sea level (include obstruction lighting) Existing	1674' (510.2 m)					

Orlando, Florida

Section V-G (page 2) **Antenna And Site Information**

6. Attach as Exhibit No. Eng. a vertical plan sketch for the proposed total structure (including supporting building, if any) giving heights above ground in feet for all significant features. Clearly indicate existing portions, noting lighting, and distinguish between the skeletal or other main supporting structure and the antenna elements.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Jules Cohen
Name

(202) 659-3707
Telephone (include area code)

Signature (check appropriate box below)

February 3, 1986
Date

☐ Technical Director ☒ Registered Professional Engineer ☐ Chief Operator ☐ Technical Consultant

JULES COHEN & ASSOCIATES, P.C.
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D.C. 20036

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF TELEVISION CONSTRUCTION PERMIT
RAINBOW BROADCASTING COMPANY
ORLANDO, FLORIDA

CH 65 5000 KW (MAX-DA) 465 METERS

February 3, 1986

JULES COHEN & ASSOCIATES, P.C.
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D.C. 20036

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF TELEVISION CONSTRUCTION PERMIT
RAINBOW BROADCASTING COMPANY
ORLANDO, FLORIDA
CH 65 5000 KW (MAX-DA) 465 METERS

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JULES COHEN & ASSOCIATES, P.C.
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D.C. 20036

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF
TELEVISION CONSTRUCTION PERMIT
RAINBOW BROADCASTING COMPANY
ORLANDO, FLORIDA
CH 65 5000 KW (MAX-DA) 465 METERS

Engineering Statement

The engineering exhibit of which this statement is part was prepared in accordance with the Rules and Regulations of the Federal Communications Commission and pursuant to the provisions of Sections V-C and V-G of FCC Form 301 on behalf of Rainbow Broadcasting Company (Rainbow), in support of an application for modification of construction permit. Rainbow has authority to construct a television broadcast station operating on channel 65 (776-782 megahertz) at Orlando, Florida (BPCT-820909KF). The maximum visual effective radiated power authorized is 5000 kilowatts and the antenna radiation center height above average terrain authorized is 1604 feet (489 meters). The instant application specifies a new site, reduction in height above average terrain to 1527 feet (465 meters), a change in antenna, and the addition of a vertically polarized component of radiation.

The proposed transmitter location satisfies all minimum separation requirements of the Commission's rules. The proposed operation will utilize the existing tower

and supporting structure of radio stations WHOO-FM, WSTF(FM) and WSSP(FM) with no increase in overall height. Hence, authorization of this proposal would constitute a minor environmental action as defined by Section 1.1305 of the Rules. FAA notification is not required and Section V-G is provided for information purposes only. Engineering specifications for the proposed operation are included herein as Figure 1.

Proposed Transmitter Location

Rainbow proposes to locate the channel 65 transmitting antenna approximately 3.4 miles northeast of Bithlo, Florida, at the geographic coordinates:

28° 34' 51" North Latitude
81° 04' 32" West Longitude.

Figure 2 herein is a portion of the Bithlo U.S.G.S. 7.5-minute quadrangle map showing the proposed transmitter location and vicinity. No AM broadcast station is located within three kilometers (approximately two miles) of this site.

The site selected by Rainbow is colocated with three FM stations, WHOO-FM, WSTF(FM) and WSSP(FM), all of which are Class C facilities having an effective radiated power of 100 kilowatts horizontal and vertical with a center of radiation 487 meters (1598 feet) above average terrain. The locations of the common antenna for these FM stations and the proposed facility are shown in Figure 3. Because of the frequency separation between UHF channel 65

and the other facilities operating on this tower, interference to or from the other existing services is not anticipated. However, in the unlikely event that interference with existing services results, Rainbow will cooperate with the affected licensees to determine the cause and provide remedy for such interference.

Proposed Equipment

Rainbow will employ a Harris Corporation, type TVE-110 transmitter, with a power output of 116.3 kilowatts; this transmitter is listed as acceptable for licensing by the FCC at a rated output power of 122 kilowatts. An Andrew, type ATW31H3.15-DSC-65 elliptically-polarized antenna, having 0.9 degree electrical beam tilt with null fill is to be employed. The antenna has a directional pattern providing efficient coverage of the desired service area from the proposed transmitter site.

The transmitter is to be coupled to the antenna through 1600 feet of Andrew, type WC-1350 circular waveguide. The combination of transmitter and antenna (after accounting for transmission line loss) will produce a maximum effective visual horizontally polarized radiated power of 5000 kilowatts at a depression angle of 0.9 degree toward an azimuth of 215 degrees true.

Figure 3 shows the pertinent dimensions of the antenna and supporting structure. The vertical plane patterns of the horizontally polarized and vertically polarized radiation are depicted in Figures 4 and 5, respectively.

Relative field and effective radiated power azimuthal radiation patterns and tabulations are shown in Figure 6 for the horizontally polarized signal. Figure 7 shows the relative field azimuthal radiation pattern for the vertically polarized signal; a tabulation of relative field values is not required but may be supplied upon request. The ratio of maximum-to-minimum field for the horizontal plane pattern is 15.4 dB, a minor departure from the 15 dB limit prescribed in Section 73.685(e) of the Rules. If waiver is required, such waiver is requested.

Coverage Contours

Distances to coverage contours were determined by the method outlined in Section 73.684 of the Rules. Elevation data from 3.2 to 16.1 kilometers from the transmitting site were derived from the National Geophysical Data Center 30-second topographic data base. The site elevation was determined from the U.S.G.S. 7.5-minute Bithlo, Florida, topographic quadrangle map of Figure 2.

Antenna height above average terrain and visual effective radiated power were used in conjunction with the curves of Figure 10b of Section 73.699 of the Rules to determine distances to the pertinent contours. A tabulation of average elevations and distances to the Grade A, Grade B and Principal City Grade contours is provided in Figure 8. A map depicting coverage contours is included as Figure 9.

Depression angles to the radio horizon were determined using the method described in Section 73.684(c)(1) of the Rules and compared against the antenna's relative field. The relative field at the pertinent depression angle was more than 90 percent of the maximum field strength developed in the vertical plane for all azimuths; therefore, the maximum radiation was used for determining distances to the Grade A and B contours.

Depression angles to the 80 dBu (Principal City) contour were calculated by means of a computer program based upon four-thirds effective earth radius. Effective radiated powers at the appropriate angles were employed for each radial.

In addition to the eight standard radials, other radials were employed as needed to delineate coverage resulting from the directional antenna pattern. Effective antenna heights on the supplementary radials were determined from the same terrain data base described above, but were not included in the calculation of antenna height above average terrain.

Population and Area Data

The population enclosed by the proposed Grade B contour totals 1,476,408 persons. The enumeration of population included within the Grade B contour was made on the basis of the 1980 U.S. Census of Population. Uniform distribution of population within each town, city or urbanized area, and within the surrounding rural areas, was assumed.

The area within the proposed Grade B contour is 20,401 square kilometers (7,876 square miles). The area was determined by polar planimeter measurement, taking into account the appropriate map scale factor.

Environmental Impact Considerations

The tower described in Figure 3 is in existence and has an overall height above mean sea level of 510.2 meters (1674 feet). Since the tower and surrounding land is presently used by three FM broadcast stations, the proposed operation, if implemented, would have a minor impact on the environment.

The FCC has adopted rules related to potential radiation hazard as a further matter to be considered with respect to environmental impact. Nonionizing radiation safety guidelines have been adopted by the FCC, as set forth in the American National Standards Institute (ANSI) Standard C95.1-1982. Those guidelines prescribe a maximum exposure level of 2.6 milliwatts per square centimeter (mW/cm^2) at the channel 65 frequency, 776-782 megahertz. Figure 10 has been prepared to demonstrate that the proposed facility is in full compliance with the ANSI standard.

Allocation Considerations

There are no critical separations which would preclude Rainbow from locating at the site proposed herein. No terrain obstructions would impair propagation to Orlando, the city of license. As shown on the coverage

map of Figure 9, the entire city of Orlando is included within the predicted 80 dBu contour.

Conclusions

Based on the engineering studies herein, the following may be concluded:

(1) The proposed operation is fully in accord with all the technical rules of the Federal Communications Commission, with the exception of a minor departure from the 15 dB ratio of maximum-to-minimum relative field for the horizontal plane pattern.

(2) 1,476,408 persons in an area 20,401 square kilometers would have available signal strength of 64 dBu or greater from the proposed operation.

(3) All of Orlando would be served with a signal strength of 80 dBu or greater from the proposed facility.

Jules Cohen, P. E.

John C. Kean

February 3, 1986

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF TELEVISION CONSTRUCTION PERMIT
RAINBOW BROADCASTING COMPANY
ORLANDO, FLORIDA
CH 65 5000 KW (MAX-DA) 465 METERS

Engineering Specifications

Channel		65
Frequency		776-782 MHz
Site coordinates	28° 34' 51" North Latitude 81° 04' 32" West Longitude	
	Feet	Meters*
Site elevation above mean sea level	65	19.8
Average elevation above mean sea level of standard eight radials, 3.2-16.1 km	31	9.4
Overall height of proposed antenna structure (existing)		
Above ground	1609	490.4
Above mean sea level	1674	510.2
Height of TV antenna radiation center		
Above ground	1493	455.1
Above mean sea level	1558	474.9
Above average terrain	1527	465 (rounded)
Transmitter manufacturer and type		Harris, TVE-110
Rated peak visual power output		122 kW
Transmission line manufacturer and type		Andrew, WC-1350
Length	(1600')	487.7 m
Efficiency (0.0478 dB/100' loss)		83.9%
Antenna manufacturer and type		Andrew, ATW31H3.15-DSC-65
Electrical beam tilt		-0.9°
Mechanical beam tilt		None

*Converted from English units.

Proposed Operation

	Visual		Aural	
Transmitter output (at output of diplexer)	116.3 kW*	20.655 dBk	11.0 kW*	10.41 dBk
Transmission line loss		0.765 dB		0.765 dB
Antenna input power ratio**				
Horizontal polarization (89.0%)		-0.51 dB		-0.51 dB
Vertical polarization (11.0%)		-9.59 dB		-9.59 dB
Horizontal Polarization				
Antenna power input		19.38 dBk		9.14 dBk
Horizontal RMS power gain		10.03 dB		10.03 dB
Overall power gain (maximum)***		17.61 dB		17.61 dB
Effective radiated power (maximum)***	5000 kW	36.99 dBk	473 kW	26.75 dBk
Horizontal RMS effective radiated power	873 kW	29.41 dBk	82.6 kW	19.17 dBk
Vertical Polarization				
Antenna power input		10.30 dBk		0.06 dBk
Horizontal RMS power gain		9.44 dB		9.44 dB
Overall power gain (maximum)****		17.69 dB		17.69 dB
Effective radiated power (maximum)****	630 kW*	27.99 dBk	59.6 kW*	17.75 dBk
Horizontal RMS effective radiated power	94.2 kW	19.74 dBk	8.9 kW	9.50 dBk

*Rounded figure.
**Power split between horizontal and vertical radiation elements is 89.0% and 11.0%, respectively.
***At 0.9 degree depression angle, azimuth 215 degrees true.
****At 0.9 degree depression angle, azimuth 270 degrees true.